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(54) Title   INTERNET-BASED BILLING METHOD FOR PAID CONTENT, AND SYSTEM FOR SAME

Abstract

The present invention relates to an Internet-based billing system for paid content that enables straightforward processing of paid content provided on the Internet, involving a circuit provider, a user computer connected to the Internet via said circuit provider, and a content provider that provides paid content to said user computer, via a billing center connected between said content provider and said circuit provider; when processing authentication and billing for the user, said circuit provider's ISP server thus receives user usage information for each content provider from the pertinent authenticated user's computer and calculates the usage fee for each content provider accessed by the user; this is transmitted whenever there is a request from the billing center, and said billing center transits the calculated usage fee for each user to the pertinent ISP server along with executing billing procedures based on the usage time for the user for each content provider received from said ISP server; thus a convenient service for billing a user who has used paid content can be provided.

Representative Drawing

Figure 1

Specification

Brief description of the figures

Figure 1 is a block configuration diagram showing the outline of the configuration of the Internet-based billing system for paid content according to one embodiment of the present invention.

Figure 2 is a block configuration diagram showing the functional internal configuration of the user computer (10) depicted in Figure 1.

Figure 3 is a diagram showing the data configuration of user-identifying information.

Figure 4 is a block configuration diagram showing the internal configuration of the ISP server (20) depicted in Figure 1.

Figure 5 is a drawing illustrating the functionality of the time server (232) depicted in Figure 4.

Figure 6 is a block configuration diagram showing the internal configuration of the management center (30) depicted in Figure 1.

Figure 7 is a diagram showing one example of a web browser screen transformed by the browser management block (13) of Figure 2.

Figure 8 is a diagram showing the authentication system (802) inserted into the webpage (801) of the content provider.

Figure 9 is a flow chart illustrating the process of assigning user-identifying information.

Figures 10a and 10b are flow charts showing the Internet-based billing method for paid content, and system for same, according to the present invention.

Explanation of principal elements of the diagrams

10 (10_1-10_m)	User computer
11	Password management block
12	Usage time management block
13	Browser management block
14, 25, 34	Database
20 (20_1-20_n)	ISP server
21, 31	Network access part
22, 32	Interface part
23, 33	Server part
30	Billing center
40(40_1-40_p)	CP server
231	Web server
232	Time server
233	Management server
331	Authentication server
332	Billing server

<u>Detailed explanation of the invention</u>
Objective of the invention
Technical field of the invention and prior art

The present invention relates to a billing system and method for same, and more specifically to an Internet-based billing system and method for same that enables straightforward levying of fees when paid content provided on the Internet is used.

Recently, as the Internet based on TCP/IP (Transport Control Protocol/Internet Protocol) has expanded and various Internet-based communications networks have become widely spread throughout the world, with the sharp growth in Internet users, the types of services provided on the Internet have also increased exponentially.

Services provided on the Internet can be broadly classified into paid and free services; in the case of paid services, information usage fees are billed by methods such as flat rate and metered rate in exchange for providing the user specialized information in fields such as movies, music, law or medicine.

However, numerous paid content providers (CP) exist on the Internet; these paid content providers employ a membership system to provide users with information services. Accordingly, an inconvenience has existed in that in order to bill the user for information usage fees, the paid content providers must calculate, bill and process payments for the information usage time of the user, as well as process user authentication.

In addition, because the payment method selected by the majority of paid content providers is a flat fee, the user must constantly remember his member ID and password for any paid content provider in which the user is enrolled as a member, and the user is burdened with the requirement of making payments to all paid content providers with which the user is enrolled regardless of the frequency of use thereof.

Technical task of the invention

Thus the present invention, which has been devised in view of the above-described situation, has the objective of providing an Internet-based paid content billing method and system for same, which enables the straightforward performance of user authentication and consequent billing when an Internet user uses paid content.

Configuration and action of the invention

The Internet-based billing method for paid content of the present invention, in order to attain said objectives, pertains to a billing method wherein authentication and billing are performed for a user by means of one or more circuit providers, one or more user computers connected to the Internet via said circuit providers, one or more content providers providing paid

content to said user computers, and a billing center connected between said content provider and said circuit provider; it comprises a program installation step wherein a program provided individually from said billing center to said user computer, circuit provider and content provider is installed; an authentication key assignment step wherein a unique authentication key is assigned by said circuit provider to said user computer; an identifying information generation step wherein user-identifying information is generated by said user computer based on the authentication key assigned in said authentication key assignment step; a user authentication step wherein authentication of a user is performed between said billing center and content provider based on said user-identifying information; a billing processing step wherein billing is performed for a user by said billing center based on the content usage information for the user which has been received from said user computer; and a billing notification step wherein billing notification for a user is performed based on the billing information received from said billing center after said billing processing step.

In addition, the Internet-based paid content billing system of the present invention, in order to attain said objectives, pertains to a billing system wherein authentication and billing are performed for a user by means of one or more circuit providers, one or more user computers connected to the Internet via said circuit providers, one or more content providers providing paid content to said user computers, and a billing center connected between said content provider and said circuit provider, wherein the configuration is such that said user computer performs authentication based on specific user-identifying information including a user authentication key and content use method key; by means of a client program provided by said circuit provider, the usage information for each content provider is collected and provided to said circuit provider; said management center calculates the billing amount for each user of said circuit provider for a specific period based on the paid content usage time information for each user, which has been received from said circuit provider.

Accordingly, under said method and configuration, billing for paid content use by Internet users is simplified compared with the billing methods of the prior art.

Hereinafter, an embodiment of this invention will be described with reference to figures.

Specifically, Figure 1 shows in outline of the configuration of an Internet-based paid content billing method according to one embodiment of the present invention; this is configured of multiple user computers ($10:10_1$-10_m); ISP (Information Service Provider) servers ($20: 20_1$-20_n), a billing center (30), and CP (content provider) servers ($40:40_1$-40_p), connected mutually via the Internet (1).

In Figure 1, said user computer (10) is provided with diverse services provided on the Internet (1) by connection to the Internet (1) via the circuit provider with which the user is enrolled, i.e., the ISP server (20) of the ISP company. In addition, said billing center (30) is

connected to said ISP server (20) so that when paid content provided to the user by each CP server (40) is used by the user, authentication for the pertinent user is performed, and billing for the pertinent user is performed according to a specific pre-defined billing method.

The authentication procedures for said user assign a unique user authentication key to each user, and are executed by the information for that authentication key being shared by the user with the ISP with which the user is enrolled and with the billing center (30). Specifically, when the user seeks to use paid content, said user authentication key is transmitted from the pertinent user computer (10) to the ISP server (20), and the ISP server (30) [sic; (20)] then transmits the pertinent user authentication key to the billing center (30).

Subsequently, when the user computer (10) is connected to the CP server (40), the services whereof are sought to be used, the user computer (10) transmits said user authentication key to the pertinent CP server (40), and the CP server (40) verifies the transmitted authentication key by then transmitting this to the billing center (30). Accordingly, when authentication procedures for the user are complete, the CP server (30) [sic; (40)] provides the paid content to the user computer (10).

Said ISP server (20) receives the path and usage time for each CP company of the authenticated user from the pertinent user's computer (10), and calculates the totaled usage time for each CP company of the user; this is transmitted whenever requested by the billing center (30). In addition, the billing center (30) processes a bill based on the usage time information for each CP company of the user transmitted from each ISP server (20), and then transmits the calculated billed amount for each user to the pertinent ISP server (20). Accordingly, the ISP server (20) by said process notifies a user who has used paid content of the usage history and billed amount.

Hereinbelow, an embodiment of the present invention is described in greater detail with reference to Figures 2 and 8.

Specifically, Figure 2 shows the functional internal configuration of the user computer (10) depicted in Figure 1; this comprises a password management block (11), usage time management block (12), browser management block (13), and database (14), and said password management block (11), usage time management block (12) and browser management block (13) show the functional blocks of the user computer (10) based on the client program described hereinafter.

In addition, said user computer (10) is an ordinary computer, and accesses the Internet (1) via a shared network such as a PSTN (public switched telephone network), ISDN (integrated services digital network), or high-speed network using optical cables.

In addition, said user computer (10) sends and transmits specific user authentication keys assigned by the ISP server (20) of Figure 1 with which the pertinent user has enrolled, in order to

perform authentication; a specific client program is furnished that displays the multiple CP servers (40) that provide paid content in channel form and is installed in the web browser furnished in the computer (10) as a plug-in.

Here said client program is provided by the ISP server (20) that is the circuit provider for the pertinent user; the website operated by said ISP server (20) is furnished with a specific menu item (not shown) for downloading said client program.

When the user downloads said client program and installs it in the user's computer (10), said client program receives an authentication key for the pertinent user from the ISP server (20) and this is stored in the user computer (10); subsequently, a specific input window (not shown) is generated to set the method of use of paid content and the adult status of the user, the input information is transformed into a content usage method key and adult status key, and these are stored together with said user authentication key. Also, said user authentication key consists of a first unique key indicating the pertinent ISP and a second unique key indicating the user.

Here, said content usage method may be selected by the user as metered, prepaid, etc., and said adult status is intended to prevent the use of adult paid content by minors. The user can change said content usage method via the web browser provided by said client program; when the content usage method has been changed, said content usage method key is changed.

In addition, said password management block (11) in Figure 2 is intended for the encryption and transmission of said user authentication key, content usage method key and adult status key as user-identifying information to the pertinent ISP server (20) and CP server (40) when the user accesses paid content. Specifically, Figure 3 shows the data configuration of said user-identifying information transmitted to said ISP server (20) and CP server (40); this consists of a user authentication key (A1), content usage method key (A2) and adult status key (A3); these are transmitted as a frame encrypted by said password management block (11).

In addition, in Figure 2 said usage time management block (12) is devised for calculation of the route and usage time of the CP company accessed by the user when the user has been provided with paid content upon accessing the CP server (40) depicted in Figure 1.

In addition, said browser management block (13) in Figure 2 is devised in order to transform the web browser furnished in the user computer (10) so as to be suitable for the use of paid content; said browser management block (13) is linked to web browsers such as Explorer provided by Micorsoft [sic; Microsoft], in such a way that the plural functional icons furnished in the web browser are transformed so as to be suitable for the use of paid content, as well as display of plural paid content managed by the billing center (30) depicted in Figure 1 in channel format.

Specifically, Figure 7 shows an example configuration of a web browser transformed by said browser management block (13); the transformed web browser configuration is provided

with a channel selection frame (702) for the display for each service item of plural CP companies that provide paid content, as well as paid icons (701) for the selection of usage start and type of paid content used by the user; when the user clicks on one of the plural channel selection items (703) furnished in said channel selection frame (702), plural CP company selection items (704) furnished in each item are displayed so that the user can connect to the CP company from which the user wishes to receive services with one click. Here the user does not have to go through separate enrollment procedures for each CP company, but is provided with paid content solely through the authentication procedure described above.

In addition, said browser management block (13) is configured so as to block access to adult CP companies by minors based on the adult status key included in said user-identifying information. Accordingly, if the user is a minor, said browser management block (13) operates so that adult CP company items are not displayed in said channel selection frame (702), and if the user enters the URL information of an adult CP corporation directly into the URL input window (not shown) of the web browser, then after displaying a specific message that usage is prohibited, access is blocked.

Said database (14) in Figure 2 is intended to store a plurality of information related to authentication and billing when the user uses paid content; this comprises a user information storage part (141) wherein the path and usage time for each CP corporation of the user is stored with the above-described user-identifying information; channel information storage part (142) wherein channel information for each service item of all CP companies registered at said management center (40) is stored; and a dangerous site information storage part (143) wherein dangerous site list information for blocking access to adult CP companies when the user is a minor is stored; it is also preferable that the data stored in said channel information storage part (142) and dangerous site information storage part (143) be updated automatically by said client program.

In addition, Figure 4 shows the internal configuration of said ISP server (20) depicted in Figure 1; this comprises a network access part (21), interface part (22), server part (23), terminal program storage part (24), and database (25).

Said ISP server (20) is a server of a business providing circuits for Internet users, such as Hanaro, Durunet or Korea Telecom; the ISP server (20) depicted in Figure 1 operates to perform authentication and billing processing related to the use of paid content by the members of said circuit, and said ISP server (20) has a specific ISP business program installed provided by the management center (30) in relation to user authentication and billing processing; this is used as an operating program for said server part (23).

Said network access part (21) shown in Figure 4 is intended for the exchange of data with said user computer (10) and management center (30) when connected to the Internet (1); said

interface part (22) supports a plurality of protocols required for data communication with said user computer (10) and management center (30), and transforms the data received through the Internet (1) into data readable by the server part (23) as well as performing operations of transforming the data received by the server part (23) via the Internet (1) into IP (Internet protocol) packets.

Also, said server part (23) in Figure 4 is intended for relaying so that user-identifying information received from said user computer (10) and the usage time information for each CP company of the user are transmitted to the management center (30), while also performing billing notification to each user computer (10) based on the billing information for each user that is received from the management center (30); it comprises a web server (231), time server (232) and management server (233).

In addition, said web server (231) is intended for the transmission of pertinent web documents to the user computer (10) based on the URL (uniform resource locator) information received from the web browser of said user computer (10); on the website provided via said web server (231), a specific menu item (not shown) is furnished in order for the circuit member to download the above-described client program.

In addition, said time server (232) is intended to calculate the usage time totaled for each CP company based on the usage information for each CP server transmitted from the pertinent user computer (10) when the user uses paid content, and then to relay this to the management center (30); said usage information for each CP company consists of path and usage time information for each CP company; said usage information for each CP company is extracted and sent by system monitoring of the web browser by the client program furnished in said user computer (10).

Figure 5 is intended to illustrate the functionality of said time server (232) when the user clicks the "paid" icon (701) depicted in Figure 7 and notifies the ISP server (20) of the start of usage of the paid content; if plural CP companies are moved via the channel selection frame (702), the pertinent user computer (10) transmits the start time and end time information for each CP company to the ISP server (20).

Accordingly, as depicted in Figure 5, when the user moves among CP companies A.COM-> B.COM -> C.COM -> A.COM, the consequent path and usage start and end time for each CP company is transmitted to the ISP server (20), and the time server (232) within the ISP server (20) calculates the usage time for the CP company for the pertinent user and stores this in the database (25); at the same time, when a request for transmission of usage information for each CP company of each user is received from the management center (30) of Figure 1, said time server (232) reads the pertinent information from the database (25) and transmits this to the

management center (30). If there are two or more accesses by the user as with A.COM above, said time server (232) totals the categorized access time and stores this in the database (25).

In addition, in Figure 4, said management server (233) generates a unique authentication key for the pertinent user based on a specific user authentication key request signal transmitted from the pertinent user computer (10) when the client program of the circuit provider is installed; in addition to transmitting this to that user computer (10), said user-identifying information transmitted according to the paid content use of the user is transmitted to the management center (30).

Here said management center (30) performs authentication on the pertinent user by comparing the user-identifying information transmitted from said management server (233) with the user-identifying information transmitted from the CP server (40) that the pertinent user seeks to access.

In addition, said management server (233) performs billing notification to each user based on the billing information for each user transmitted from the management center (30). Here, if the user selects a flat-rate payment as the method of use of paid content, the usage time and usage amount for each CP company of the user is notified, and if the user has selected prepayment of a specific amount, billing notification is performed wherein the usage amount is deducted from the pertinent prepayment amount.

In addition, said terminal program storage part (24) in Figure 4 is intended to store the above-described client program provided to the circuit member for the use of paid content; as described above, this is provided to the user via the website of the pertinent ISP. If said client program is a version upgrade, in order to maintain stability in billing, the client program of said user computer (10) is automatically upgraded.

In this case, for example, if the user notifies the ISP server (20) of the start of use of paid content by clicking the "paid" icon (701) depicted in Figure 7, said management server (233) first verifies the version information of the client program installed in the pertinent user computer (10), and if the version information thereof is an earlier version that the client program stored in said terminal program storage part (24), the client program of the pertinent user terminal (10) is automatically upgraded.

Said database (25) in Figure 4 is intended to store the information related to user billing and authentication; this comprises a user information storage part (251) wherein the above-described user-identifying information for the user is stored corresponding to a specific member number; a CP company information storage part (252) wherein specific management information is stored for each CP company registered with the billing service; a content usage information storage part (253) wherein are stored the CP company usage information and billing amount therefor for each user, corresponding to said member number; and a dangerous site information

storage part (254) wherein is stored list information for dangerous sites in order to block access by minors to adult CP companies.

Here, said member number signifies a specific identifying number for each ISP corporation to manage its members; this is used to identify the pertinent user when providing billing notification to the user. Specifically, this is because in the case of an ISP corporation providing dynamic IP addresses to its circuit members, when the user accesses the Internet (1), the pertinent user cannot be identified in a straightforward manner.

It is preferable that, in the case of an ISP corporation providing a telephone number service as well as dynamic IPs, that telephone number be used to verify said member number; said telephone number is entered when installing the client program of the user and is transmitted to the ISP server (20), and in the case of an ISP corporation that only provides dynamic IPs, in order to verify said member number, the serial number designated on, for example, the cable modem of the pertinent user is used, and this also is input when installing said client program and is transmitted to the ISP server (20).

In addition, in the case of an ISP requesting a personal ID and password when accessing the Internet (1), that personal ID is used as identifying information and without any separate member verification procedures, it is possible to provide the billing service.

Figure 6 shows the internal configuration of said management center (30) depicted in Figure 1; this comprises a network access part (31), interface part (32), server part (33) and database (34).

In addition, said network access part (31) and interface part (32) in Figure 6 fundamentally operate in the same way as the network access part (21) and interface part (22) depicted in Figure 4; thus a detailed description thereof is omitted.

In Figure 6, said server part (33) is intended for the performance of authentication and billing processing related to the use of paid content by the user; this comprises an authentication server (331) and billing server (332).

Said authentication server (331) first compares the user-identifying information received from the ISP server (20) of Figure 1 with the user-identifying information received from the CP server (40); if the user-identifying information matches, authentication of the user is performed by transmitting specific verification information to the CP server (40). If the user-identifying information does not match, said authentication server (331) transmits a specific "cannot authenticate" message to the pertinent CP server (40), and blocks the use of the paid content by the invalid user. Here said authentication server (331) compares each of the user authentication key, content usage method key, and adult status key by reading the encrypted user-identifying information.

In addition, said billing server (332) is intended to perform billing processing for users authenticated by said authentication server (332) [sic; (331)], and said billing server (332) first requests usage time information for each CP corporation of each user from said ISP server (20) at a fixed interval, storing this in the database (34), and then performs user billing calculations for each ISP. In said database (34) is stored usage method information for each user and usage fee information per unit time for each CP company; said content usage method information is extracted from the user-identifying information received from said ISP server (20).

In addition, said database (34) in Figure 6 is intended to store information related to the management of CP companies and the billing and authentication of users; this comprises a user information storage part (341), CP company information storage part (342), ISP information storage part (343), content usage information storage part (344), and dangerous site information storage part (345).

In said user information storage part (341) is stored user-identifying information received from each ISP server (20) corresponding to a specific management number indicating the pertinent ISP; in said CP company information storage part (342) is stored usage fee information per unit time and URL information for each CP company registered with the billing service.

In addition, in said content usage information storage part (344) is stored paid content usage information for the user for each ISP corporation, transmitted from the ISP server; said paid content usage information consists of usage time information for each CP company for each user during a specific period.

In addition, said dangerous site information storage part (345) is intended to store the information of a list of dangerous sites for blocking access by minors to adult CP companies; said dangerous site list information is input and revised by the management center administrator, and the input and revised information is transmitted by said authentication server (331) to each of the ISP servers (20), and each ISP server (20) upgrades the client program of the user computer (10), thus altering the dangerous site list configuration of the channel list displayed in the web browser of the user computer (10).

In addition, said CP server (40) in Figure 1 is a server of a CP company provided with billing service by said management center (30); for the purpose of user authentication, a specific authentication strip is inserted into the paid content website provided via said CP server (40), and this is provided from said management center (30) by a specific management program.

As depicted in Figure 8 also, said authentication strip (802) is inserted into the website (801) of the CP company registered with the billing service; this is inserted into the tags that comprise the pertinent website.

Said authentication strip requires identifying information on the pertinent user from the client program in the event that the user computer (10) is connected to the pertinent CP server

(40); after the transmitted user-identifying information has been transmitted to said billing center (30), the paid content usage of the pertinent user is determined according to whether authentication was verified by the billing center (30).

Hereinbelow, the operation of the present invention, configured as described above, is explained.

Figure 9 is a flow chart intended to illustrate the process of assignment of the user-identifying information described above; first, the user downloads a required client program upon a request for the billing service, by accessing the ISP server (20) of the circuit provider via the Internet (1) (ST 901). Specifically, a specific menu item (not shown) is furnished on the website operated by each ISP server (20) in order to download said client program, so that if the circuit user of the ISP corporation seeks to be provided with billing service based on the use of paid content, the client program is downloaded by clicking on that menu item (ST902). In addition, it is also possible for said client program to be turned onto a separate CD (compact disc) and distributed on the market, and for the user to install this.

Said client program transmits a specific authentication key request signal for authentication of the user during the installation process to the pertinent ISP server (20) (ST903, ST904); the ISP server (20) generates a unique authentication key for the pertinent user on the basis of this, and transmits this to the user computer (10) (ST905).

If the ISP server is a corporation that provides a telephone number service as well as dynamic IPs, that telephone number is used as the identifying information and classified as the authentication key of the pertinent user. In addition, if the ISP corporation only provides dynamic IPs, the administrator of the pertinent ISP corporation performs separate verification of the user.

Thereafter, the client program stores the user authentication key transmitted from said ISP server (20) in a specific region administered by the web browser (ST906), and furthermore a specific input window is displayed on the user computer (10) requesting the method of use of paid content by the pertinent user and the user's adult status. Said paid content usage methods comprise, for example, metered payment and prepayment; the user may select and input the desired billing method, and the selection of said content usage method may be changed not only at the time of installation of the client program, but also if desired by the user via an environment setting (not shown) furnished in the web browser (ST907).

In addition, the client program transforms the information indicating said content usage method and adult status input by the pertinent user into a specific content usage method key and adult status key for storage with the pertinent user's authentication key; this constitutes the user-identifying information depicted in Figure 3, and after encryption by the password management

block (11) in Figure 2, it is transmitted to the pertinent ISP server (20) and used as authentication information when the user uses paid content or is billed (ST908).

Hereinbelow, the operation of the present invention is described in detail with reference to the flow charts in Figures 10a and 10b.

When the client program is installed in the user computer (10) according to the process depicted in Figure 9, the browser management block (13) of Figure 2, as depicted in Figure 7, transforms the web browser configuration of the user computer (10) so as to be suitable for the use of paid content (ST101).

Subsequently, if the user seeks to use paid content, the user clicks on the "paid" icon (701) in Figure 7, and the browser management block (13) of Figure 2 recognizes this and transmits the encrypted user-identifying information to the pertinent ISP server (20) via the password management block (11) (ST102, ST103).

When the identifying information for the pertinent user is transmitted from the user computer (10), the ISP server (20) first recognizes this as the paid content usage start signal, and then stores the time of paid content usage start and the transmitted user-identifying information in the database (25) depicted in Figure 4 (ST104).

In addition, the ISP (20) transmits the user-identifying information received from the user computer (10) to the management center (30) (ST105), and the billing center (30) stores the user-identifying information transmitted from each ISP server (20) in the database (34); said user-identifying information is used when authenticating and calculating billing for the user (ST106).

If the CP company from which the user seeks to obtain paid content is selected via the channel selection frame (702) depicted in Figure 7, the website for the pertinent CP company is transmitted to the user computer (10), and the authentication strip (802) depicted in Figure 8 for the CP company responds to this by sending a request for specific user-identifying information to the user computer (10). Accordingly, the client program within the user computer (10) transmits the encrypted user-identifying information to the pertinent CP server (40) via the browser management block (13) of Figure 2 and the password management block (11) (ST108).

Subsequently, the CP server (40) that has received the user-identifying information transmits this to the management center (30) so as to verify that the pertinent user is an authenticated user (ST109). The authentication server (331) within the management center (30) then compares the user-identifying information received from the user computer (10) and CP server (40) (ST110), and transmits specific authentication verification information to the CP server (40) (ST111).

Consequently, if the pertinent user is an authenticated user, the CP server (40) provides the paid content to the user computer (10), and if it is determined that the user is not an

authenticated user, a specific cannot-use message is transmitted to the user computer (10) and the usage is blocked (ST112, ST113).

When authentication has been completed according to the process described above, the time server (232) within the user computer (10) notifies the ISP server (20) of the usage start time of the pertinent CP company (ST114), and in the event that the user moves to another CP company, the usage start time of the CP company to which the user moved, and the usage end time of the previous CP company, are announced (ST115, ST116). Accordingly, when a user moves through a plurality of CP companies as depicted in Figure 5, the movement path and usage time are transmitted to the ISP server (20) and stored in the database (25) of Figure 4 (ST117).

In addition, when using paid content, by again clicking the "paid" icon (701) depicted in Figure 7, the usage is terminated (ST118), and if the user does not terminate the use of paid content in said step ST118, the user moves to said step ST115 and repeats the operation. Also, when the use of paid content is terminated, a specific paid content termination message is sent to the ISP server (20) from the user computer (10); the ISP server (20) totals the usage time for the CP companies accessed by the user (ST119, ST120).

In addition, at a certain interval, the billing server (332) within the management center (30) of Figure 6 requests usage time information for each CP company and each user from the ISP server (20) (ST121), and when the pertinent information is received from the ISP server (20) (ST122), billing is performed for each user based on the fee information for each unit of time for each CP company and the selected method of content use (ST123).

Also, the calculated billing information is transmitted to the pertinent ISP server (20), and the ISP server (20) upon request for circuit usage fees for the pertinent user, notifies the pertinent user of the paid content usage fees calculated according to the above-described process (ST124-ST126).

In other words, according to the above-described embodiment, when an Internet user uses paid content, the paid content is provided simply without separate member enrollment procedures, and even if the Internet user uses plural paid content, authentication and billing procedures can be executed in a straightforward manner.

The present invention is not limited to said embodiment, and it is possible to implement diverse modifications while remaining within the scope of the technical idea of the present invention.

For example, although in the above embodiment a billing service was described that is provided to a member enrolled with an ISP corporation, it is also possible to apply the ISP server of the present invention to a fee server of a game room where authentication and billing notification are performed.

Additionally, in the above embodiment, the user can choose a metered rate or prepayment as the method of content use, but for example in the case of a CP company providing movies or 3(MP3) [sic] music files as paid content, or of a CP company providing various utility programs, a specific amount can be set for a movie, music, or utility program downloaded by the user and billing performed on this basis, so in this case, it is preferable to levy fees not based on usage time.

Here the configuration is such that the billing center (30) first stores the amount information for each specified download from the pertinent CP company, and on this basis calculates the billed amount; when the CP company is selected by the user, the client program within the user computer (10) displays in the web browser whether the pertinent CP company is a CP company that performs billing for each download, and for each item of downloaded movies, music, or utility programs, the fee information levied for the download is displayed. Also, the information related to the above fee processing is transmitted from the management center (30) to each ISP server (20), and each ISP server (20) sends the pertinent information to the user computer (10) when the client program of the user is updated. In addition, within the usage time information for each CP company and each user that is transmitted from the ISP server (20) to the billing center (30) is included download information for each of said CP companies, and within said download information is included specific identifying information for the files downloaded by the user. In addition, the fees for the downloads by the user from each CP company are added to the billed amount according to the above-described metered payment or prepayment system and the result is billed to the user.

Effect of the invention

As described hereinabove, the present invention enables a user to conveniently use the paid content of respective CP companies without separate user enrollment procedures, by performing authentication and billing by the pertinent ISP server and management center whenever an Internet user uses paid content.

In addition, in the case of the present invention, inasmuch as user authentication is accomplished by comparing transmitted user-identification information received via different paths, it is possible to defend against the use of paid content by illegal users.

Claims

1. An Internet-based billing method for paid content wherein authentication and billing are performed for a user by means of one or more circuit providers, one or more user computers connected to the Internet via said circuit providers, one or more content providers providing paid content to said user computers, and a billing center connected between said content provider and

said circuit provider, comprising a program installation step wherein a program provided individually from said billing center to said user computer, circuit provider and content provider is installed; an authentication key assignment step wherein a unique authentication key is assigned by said circuit provider to said user computer; an identifying information generation step wherein user-identifying information is generated by said user computer based on the authentication key assigned in said authentication key assignment step; a user authentication step wherein authentication of a user is performed between said billing center and content provider based on said user-identifying information; a billing processing step wherein billing is performed for a user by said billing center based on the content usage information for the user that has been received from said user computer; and a billing notification step wherein billing notification for a user is performed based on the billing information received from said billing center after said billing processing step.

2. The Internet-based paid content billing method recited in Claim 1, wherein said identifying information generation step comprises a first step wherein the method of use of the paid content and the adult status are input when installing a client program provided for user authentication and billing on said user computer; a second step wherein the method of use of the paid content and adult status information input in said first step are transformed into specific key data; and a third step wherein the content usage method key and adult status key transformed in said second step, and the user authentication key assigned in said authentication key assignment step, are stored in the management area of a web browser as identifying information.

3. The Internet-based paid content billing method recited in Claim 1, wherein said user authentication step comprises a first step wherein based on the notification of said circuit provider ISP server of the usage time of paid content by operation of the user's web browser, said user's identifying information is transmitted to said ISP server; a second step wherein said user-identifying information is transmitted by said ISP server to said billing center; a third step wherein said user-identifying information is transmitted to said content provider CP server according to the election of the content provider from whom the user wishes to received paid content, by operation of the web browser; a fourth step wherein the CP server of said content provider transmits said user-identifying information to said billing center based on the execution of an authentication request by the pertinent user; and a fifth step wherein said billing center compares the user-identifying information received from said ISP server and said CP server respectively and transmits verification information to said CP server.

4. The Internet-based paid content billing method recited in Claim 1, wherein said billing processing step comprises a first step wherein said user computer tracks the paid content path and usage time of the user via system monitoring of the web browser; a second step wherein the paid content usage information tracked in said first step is transmitted to said circuit provider's

ISP server; a third step wherein said ISP server calculates the usage time for each content provider of the pertinent user; a fourth step wherein the information calculated according to said third step is transmitted to said billing center when a signal is received from said billing center requesting the usage time for each content provider; a fifth step wherein billing processing is performed by the billing center for each user based on the usage time information for each content provider received from said ISP server; and a sixth step wherein the billing information for each user calculated according to said fifth step is transmitted to said ISP server at a fixed interval.

5. The Internet-based paid content billing method recited in Claim 1, wherein said user-identifying information includes information showing whether the user is an adult, and said user authentication step additionally includes a step wherein if the content provider that the user seeks to access is an adult site, access by a minor is blocked based on said user-identifying information.

6. The Internet-based paid content billing method recited in Claim 1, wherein in said billing step, if said content provider is a company seeking to levy fees for each download, after storing amount information for each download file provided by each content provider, the billed amount is calculated based on the user download history.

7. An Internet-based paid content billing system wherein authentication and billing are performed for a user by means of one or more circuit providers, one or more user computers connected to the Internet via said circuit providers, one or more content providers providing paid content to said user computers, and a billing center connected between said content provider and said circuit provider, wherein said user computer performs authentication based on specific user-identifying information including a user authentication key and content use method key; by means of a client program provided by said circuit provider, the usage information for each content provider is collected and provided to said circuit provider; said management center calculates the billing amount for each user of said circuit provider for a specific period based on the paid content usage time information for each user, which has been received from said circuit provider.

8. The Internet-based paid content billing system recited in Claim 7, wherein said user computer is configured to include a password management block that encrypts user-identifying information when the user uses paid content and is configured with a user authentication key, content usage method key and adult status key; a usage time management block that calculates the path and usage time for each content provider accessed by the user when the user has accessed a content provider CP server and has been provided with paid content; a browser management block that displays multiple content providers managed by said billing center in a channel format, along with generating a plurality of functional icons so as to make the web browser suitable to the use of paid content; and a database wherein is stored channel information

for each content provider item registered with said management center and the path and usage time for each content provider related to the paid content use and billing of the user.

9. The Internet-based paid content billing system recited in Claim 7, wherein said circuit provider furnishes an ISP server that performs user authentication and billing processing, and said ISP server comprises a network access part for accessing the Internet; an interface part that supports the protocol required when accessing the Internet; a server part that performs billing notification to each user computer based on the billing information for each user that has been received from said management center together with relaying usage information for the user for each content provider as well as user-identifying information transmitted from said user computer to said management center; a terminal program storage part that stores a client program provided to the user for use of paid content; and a database wherein the usage time and usage amount for each content provider of the user is stored corresponding to a specific member number, and wherein said user-identifying information is stored corresponding to said member number in relation to user authentication and billing.

10. The Internet-based paid content billing system recited in Claim 7, wherein said management center comprises a network access part for accessing the Internet; an interface part that supports the protocol required when accessing the Internet; a server part furnished with an authentication server that compares the user-identifying information received from said circuit provider ISP server and said content provider CP server and transmits verification information to said CP server and a billing server that calculates the billed amount for the user whose authentication has been verified by said authentication server to said ISP server; and a database wherein paid content usage time information for the user is stored for a specific period for each circuit provider received from said ISP server, and management information for each content provider registered to provide content is also stored.

11. The Internet-based paid content billing system recited in Claim 7, wherein said user-identifying information additionally includes an adult status key showing whether the user is an adult, and said user computer, ISP server and management center are furnished with a list of specific dangerous sites wherein access by minors to adult content providers is blocked, so that said management center determines whether to block access after verifying whether the user is an adult based on said user-identifying information.
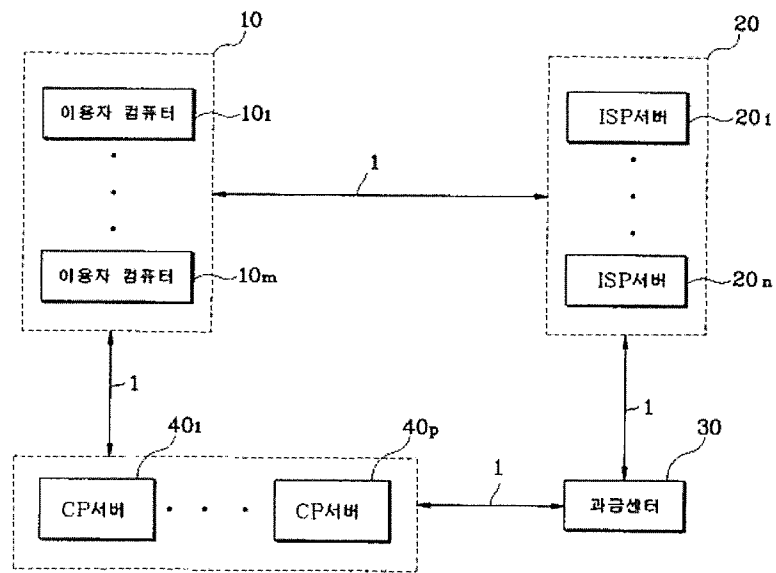
Figures

Figure 1

Key: 10₁   User computer
      10ₘ   User computer
      20₁   ISP server
      20ₙ   ISP server
      30   Billing center
      40₁   CP server
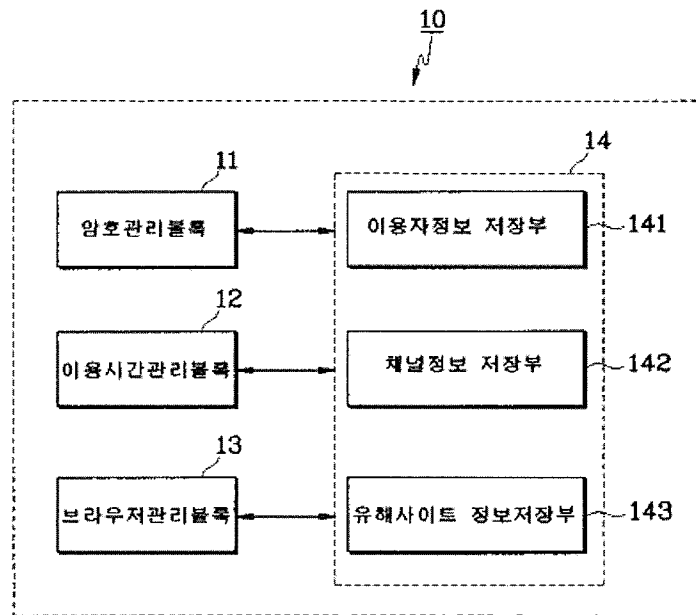   40ₚ   CP server

Figure 2

Key: 11   Password management block
       12   Usage time management block
       13   Browser management block
       141   User information storage part
       142   Channel information storage part
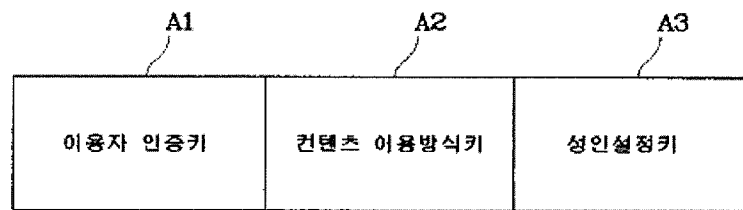   143   Dangerous site information storage part

Figure 3

Key: A1   User authentication key
       A2   Content usage method key
       A3   Adult status key
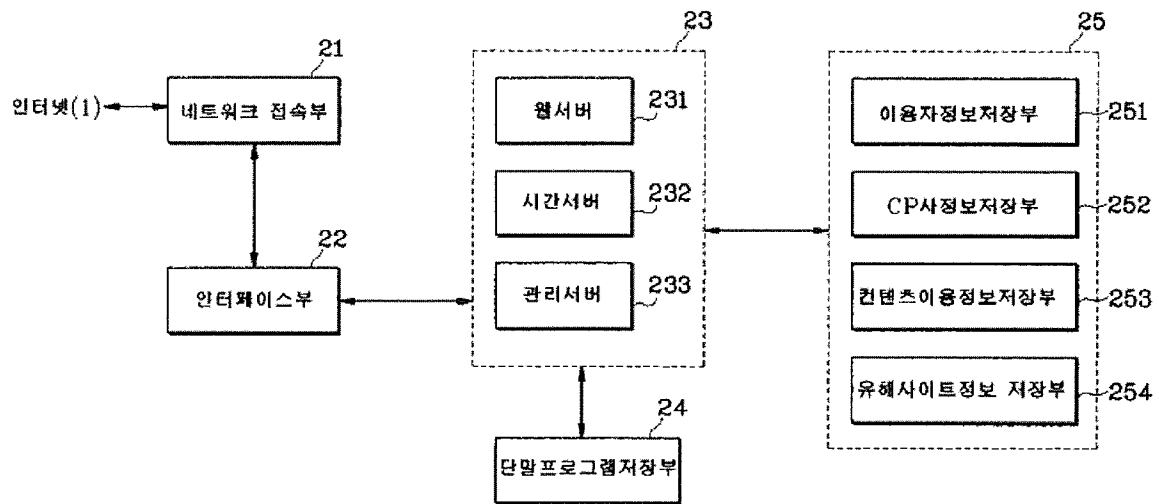
Figure 4

Key:
1   Internet
21   Network access part
22   Interface part
24   Terminal program storage part
231   Web server
232   Time server
233   Management server
251   Usage information storage part
252   CP company information storage part
253   Content usage information storage part
254   Dangerous site information storage part

| Movement path		User computer (10) → ISP server (20)	ISP server (20)
Start	End		
Fee start		Fee start notification	Storage of user key data and start time
A. COM		Notification of A.COM start time	Storage of A.COM start time
B. COM	A. COM	Notification of A.COM end, B.COM start time	Storage of A.COM end time and B.COM start time
C. COM	B. COM	Notification of B.COM end, C.COM start time	Storage of B.COM end time and C.COM start time
A. COM	C. COM	Notification of C.COM end, A.COM start time	Storage of C.COM end time and A.COM start time
	Fee end	A.COM end, fee end	Storage of A.COM end time and fee end time

Figure 5
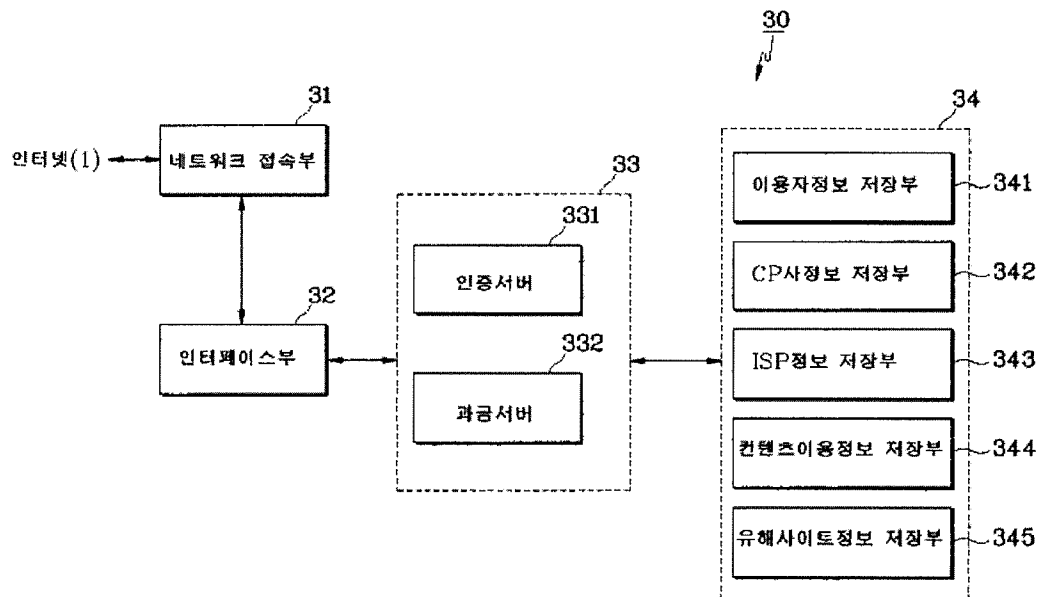
Figure 6

Key:
1	Internet
31	Network access part
32	Interface part
331	Authentication server
332	Billing server
341	User information storage part
342	CP company information storage part
343	ISP information storage part

344 Content usage information storage part
345 Dangerous site information storage part

Figure 7
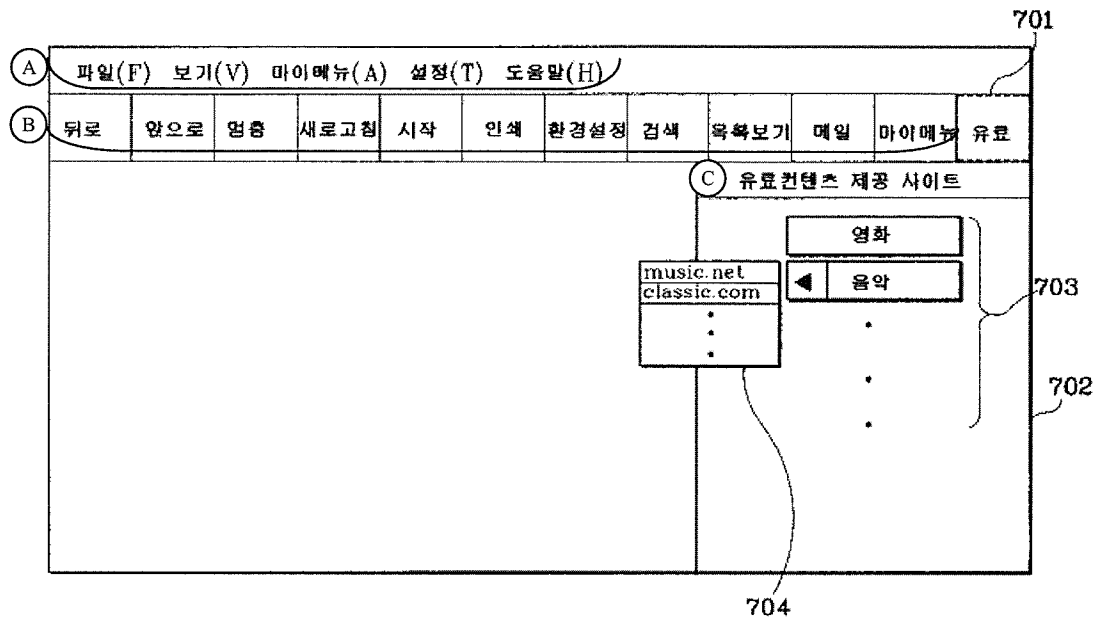
Key: A File (F)
      View (V)
      My Menu (A)
      Settings (T)
      Help (H)
   B Back
      Forward
      Stop
      Refresh
      Start
      Print
      Environment settings
      Search
      View list
      Mail
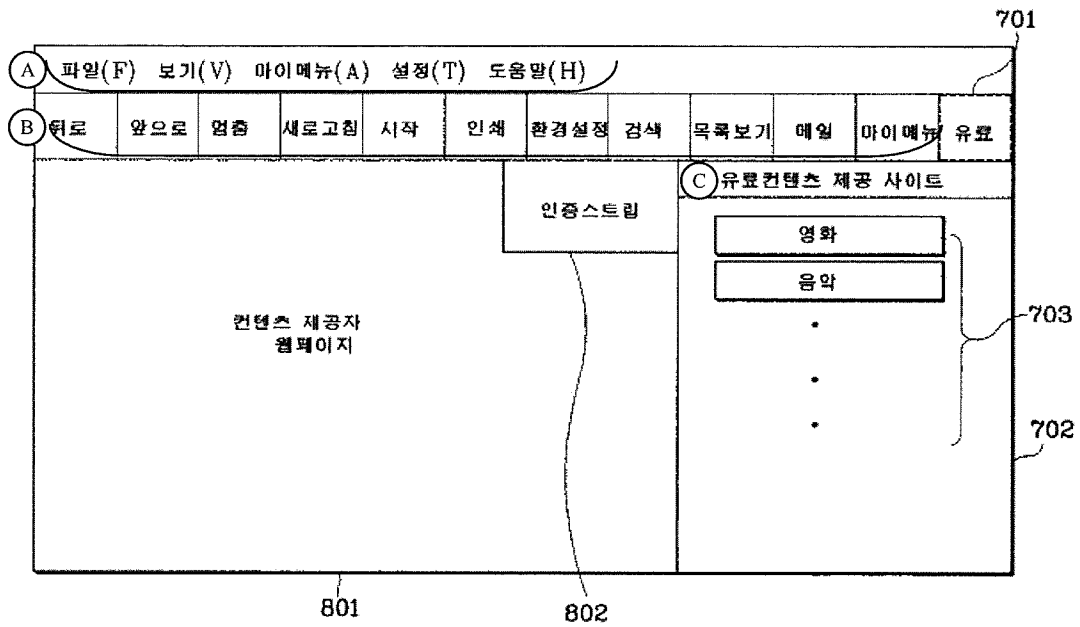   My Menu
   C Paid content provider sites
   701 Paid
   703 Movies
      Music

Figure 8

Key: A   File (F)
            View (V)
            My Menu (A)
            Settings (T)
            Help (H)
       B   Back
            Forward
            Stop
            Refresh
            Start
            Print
            Environment settings
            Search
            View list
            Mail
            My Menu
       C   Paid content provider sites
       701 Paid
       703 Movies
            Music
       801 Content provider website
       802 Authentication strip
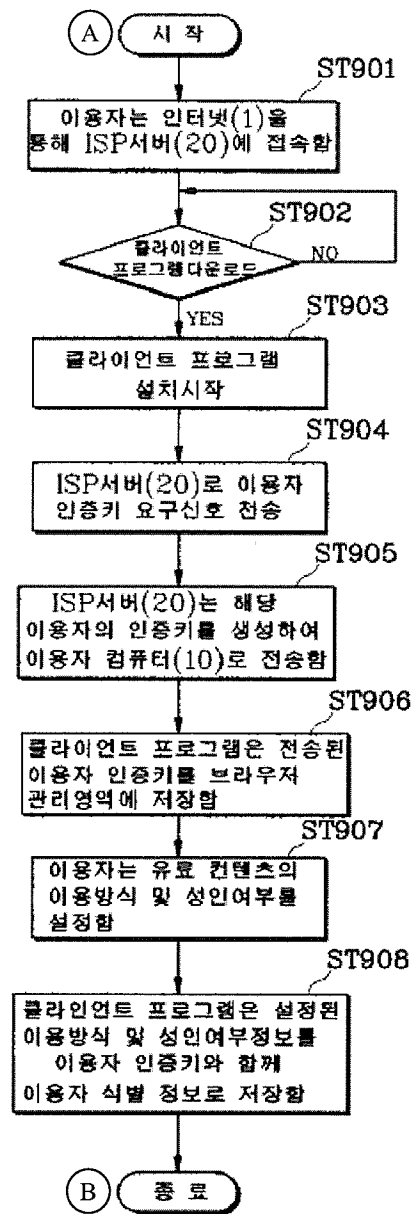
Figure 9

Key: A   Start
      B   End
      ST901 User accesses ISP server (20) via Internet (1)
      ST902 Client program downloaded?
      ST903 Start installation of client program
      ST904 Send user authentication key request signal to ISP server (20)
      ST905 ISP server (20) generates authentication key for pertinent user and transmits this
             to user computer (10)

ST906 Client program stores transmitted user authentication key in browser
administration area
ST907 User sets paid content usage method and adult status
ST908 Client program stores usage information and adult status together with user
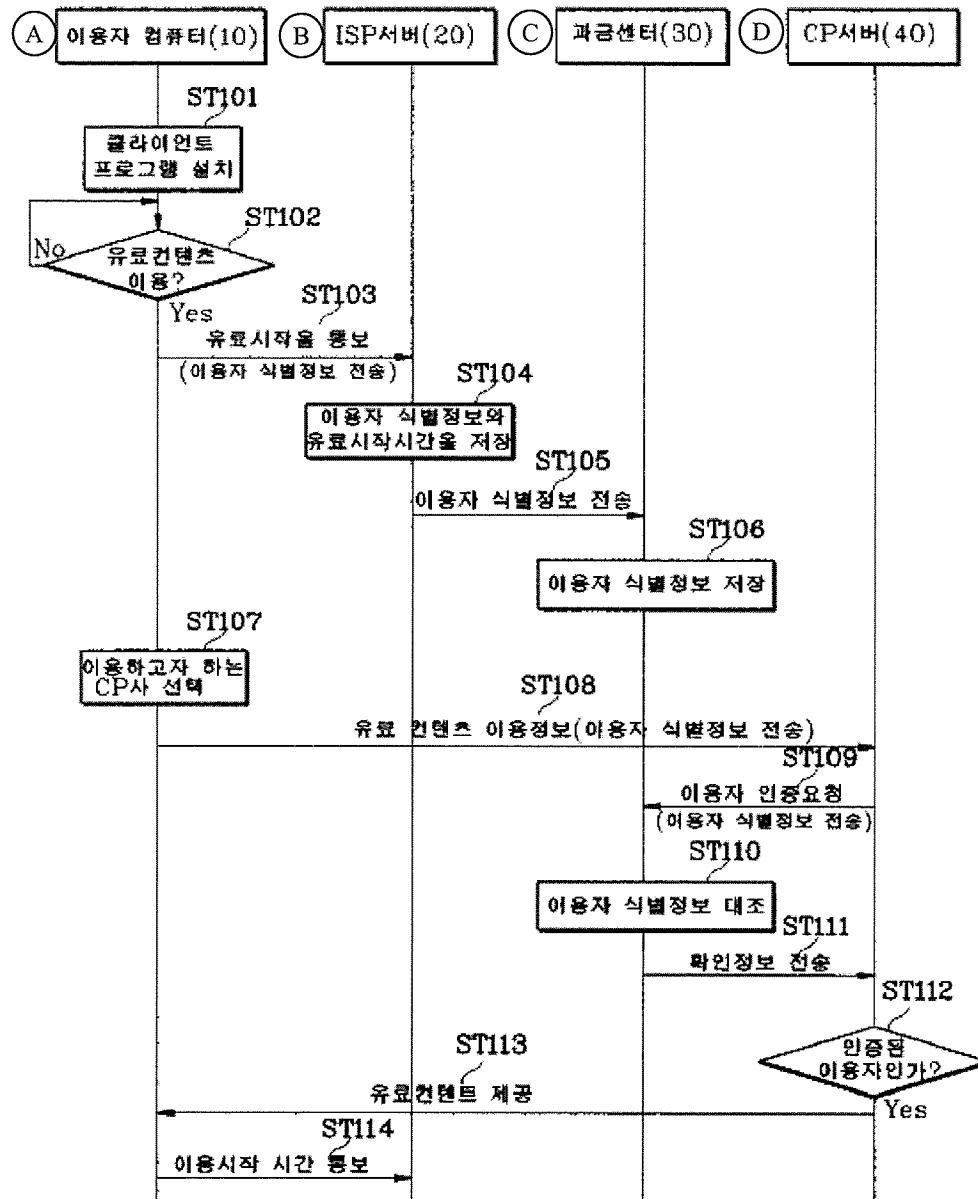authentication key as user-identifying information

Figure 10a

Key: A   User computer (10)
      B   ISP server (20)
      C   Billing center (30)

D   CP server (40)

ST101 Install client program

ST102 Use paid content?

ST103 Notification of fee start (transmit user-identifying information)

ST104 Store user-identifying information and fee start time

ST105 Transmit user-identifying information

ST106 Store user-identifying information

ST107 Select CP company to be used

ST108 Paid content usage information (transmit user-identifying information)

ST109 Request user authentication (send user-identifying information)

ST110 Compare user-identifying information

ST111 Transmit verification information

ST112 Is user authenticated?

ST113 Provide paid content

ST114 Notify usage start time
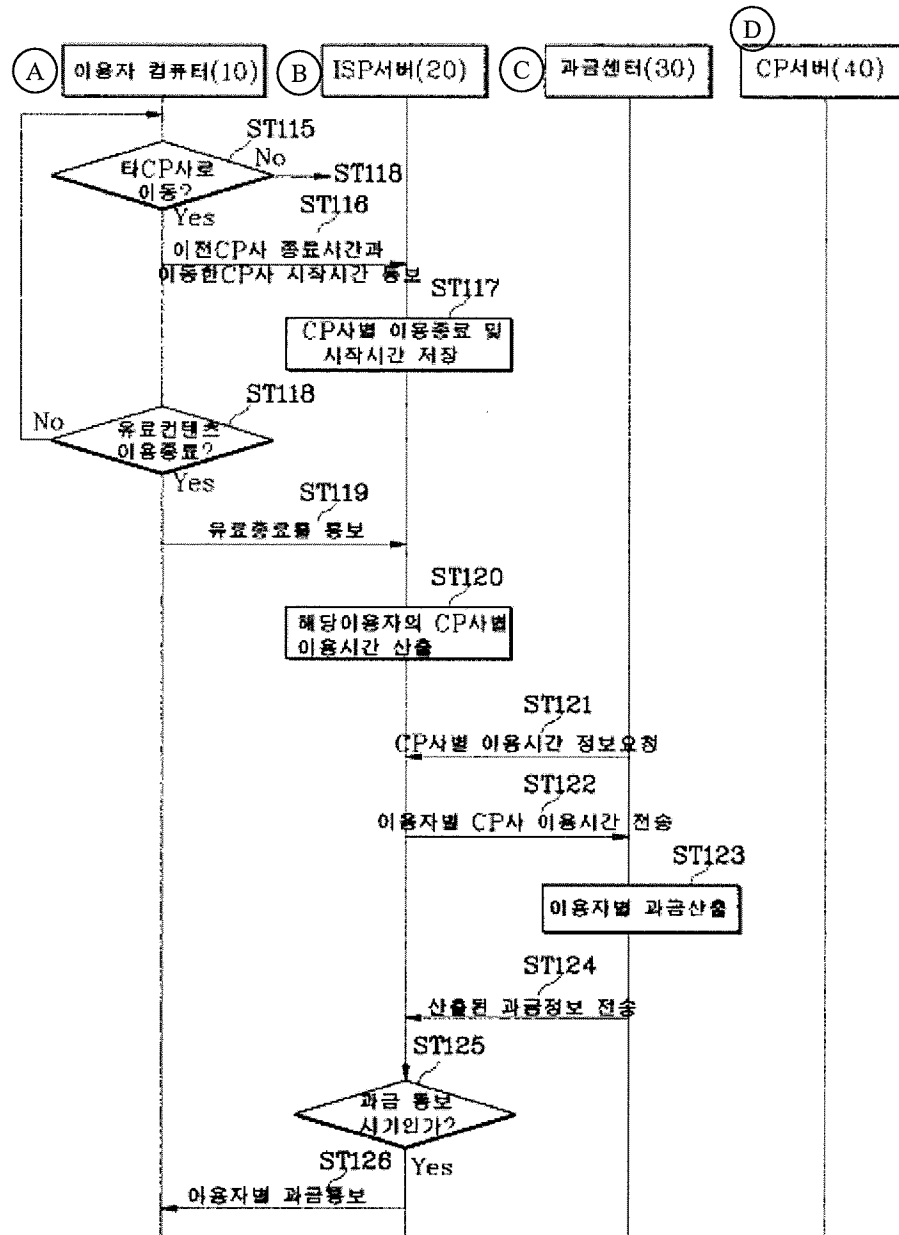
Figure 10b

Key: A   User computer (10)
      B   ISP server (20)
      C   Billing center (30)
      D   CP server (40)
      ST115 Move to other CP company?
      ST116 Notify end time of previous CP company and start time of moved-to CP company
      ST117 Store usage end and start time for each CP company
      ST118 End using paid content?
      ST119 Notify fee end

ST120 Calculate usage time for each CP company for the pertinent user
ST121 Request usage time information for each CP company
ST122 Transmit usage time for CP company for each user
ST123 Calculate billing for each user
ST124 Transmit calculated billing information
ST125 Is it time for billing notification?
ST126 Notify each user regarding billing